



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|-----------------------------|------------------|
| 10/080,474 | 02/22/2002 | James R. Molnar | 89190.146300/DP-302411 | 8464 |
| 22851 7590 01/30/2007 DELPHI TECHNOLOGIES, INC. M/C 480-410-202 PO BOX 5052 TROY, MI 48007 | | | EXAMINER GANEY, STEVEN J | |
| | | | ART UNIT 3752 | PAPER NUMBER |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
| 3 MONTHS | | 01/30/2007 | PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/080,474 | Applicant(s) MOLNAR, JAMES R. | |
| | Examiner Steven J. Ganey | Art Unit 3752 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26-28 and 46 is/are allowed.
- 6) ☒ Claim(s) 29-31, 33-40 and 42-45 is/are rejected.
- 7) ☒ Claim(s) 32 and 41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Receipt is acknowledged of the amendment filed on October 31 , 2006, which has been fully considered in this action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 29-31, 33-35, 38-40 and 42-45 rejected under 35 U.S.C. 103(a) as being unpatentable over Luttrell et al in view of Park et al.

Luttrell et al discloses a fuel injector assembly and electric solenoid valve comprising a plurality of components 24 and 26 formed of solenoid-quality ferritic stainless steel, see col. 6, lines 36-39 and 43-44, which are adjacent and joined by laser welding, see, col. 7, lines 39-41, an electric solenoid actuator 18/22/28/30'; a solenoid-quality ferritic stainless steel injector body 14; a solenoid body 24; fuel tube 16 formed of austenitic stainless steel(i.e. 304 stainless steel) welded to injector body 14, see col.5, lines 10-36; and coil body 24 formed of solenoid-quality ferritic stainless steel, except for the ferritic stainless steel being "stabilized" ferritic stainless steel as argued by the applicant. Note that Luttrell et al discloses that other ferritic steels can be used, besides 430 stainless or 430F stainless steels, see col. 5, line 2 and line 65 and col. 6, line 22 and lines 38 and 39. Park et al discloses a solenoid-quality stabilized ferritic stainless steel

Art Unit: 3752

alloy comprising 20-30% chromium in weight percentage, and 1.5% weight or less titanium. It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the ferritic stainless steel alloy of Park et al for the ferritic stainless steel alloy of Luttrell et al since Luttrell et al discloses that other ferritic steels may be used and since Park et al teaches that the stabilized ferritic stainless steel has better corrosion resistance than the ferritic stainless steel as disclosed in Luttrell et al. Such a stabilized ferritic stainless steel used in Luttrell et al, as taught by Park et al, would perform equally as well in the apparatus of Luttrell et al.

As to claim 35, see col. 13, lines 48-51, i.e. workability.

4. Claims 36 and 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Luttrell et al in view of Park et al as applied to claims 33-36 above, and further in view of Kosa et al.

Luttrell et al in view of Park et al, discloses all the featured elements of the instant invention, except for the free chip-breaking inclusions where the inclusions comprise sulfur and manganese. Note that Park et al has manganese in the stabilized ferritic stainless steel. Kosa et al discloses a solenoid-quality stabilized ferritic stainless steel alloy that can be used in components for solenoid valves and components of fuel injection systems, see col. 5, lines 5-10. Note that the solenoid-quality stabilized ferritic stainless steel alloy of Kosa et al comprises free machine grade solenoid-quality stabilized ferritic stainless steel comprising inclusions comprising sulfur and manganese. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the inclusions comprising sulfur and manganese, in the fuel injector of Luttrell et al, as modified by Park et al, since Kosa et al teaches that the addition of such inclusions benefits the machinability of the alloy.

Allowable Subject Matter

5. Claims 26-28 and 46 are allowed.
6. Claims 32 and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven J. Ganey whose telephone number is 571-272-4899. The examiner can normally be reached on 7:00-5:00; M, Tu, W and Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on 571-272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

sjg
1/22/07



STEVEN J. GANEY
PRIMARY EXAMINER
1/22/07